

## CLAIMS

1. Frequency allocation scheme for optical channels transmitted via a -WDM transmission line with alternating left side and right side filtering for adjacent channels
  - Having channels with alternating channel spacing of A and B, where  $A < B$ ,
  - Having two sets of channels orthogonally polarized.
2. Frequency allocation scheme according to claim 1 where the two set s of orthogonal polarized channels are shifted versus each others by a value  $A/2 + \delta_{\text{Filter}} \pm 20\%$
3. Transmission system with a transmitter function, a transmitting fiber and a receiver function:
  - The transmitter function comprising polarized light sources (1), with modulators (2) and a wavelength multiplexer (3)
  - The receiver function comprising at least a polarization demultiplexer (11), a wavelength demultiplexer (5), filters and electrical receivers.